

High-Frequency Capacity Pickups (Cont.)

SOV/5242

Basic formulae for computing the characteristics of these devices are given and the measuring circuits most widely used for determining their electrical parameters are presented. A number of electronic instruments using h-f pickups are examined. No personalities are mentioned. There are 8 references, all Soviet (including 1 translation).

TABLE OF CONTENTS:

Introduction	3
Ch. I. Capacity Pickups	
General observations	5
Areas of application of capacity pickups	5
Special features of capacity pickups	6
Computing the characteristics of some capacity pickups	11
	13

Card 2/4

LJ.265

S/785/61/000/008/005/005
E194/E155

AUTHOR: Mikhlin, B.Z.

TITLE: The threshold of sensitivity and errors of nuclear-resonance magnetometers

SOURCE: USSR. Ministerstvo geologii i okhrany nedor. Osoboye konstruktorskoye byuro. Geofizicheskoye priborostroyeniye. no.8. 1961. 98-101

TEXT: Continuous measurements of a magnetic field cannot be made with nuclear-resonance magnetometers, which are essentially cyclic in operation. The discreteness of their operation introduces errors and impairs sensitivity. It is first shown that the frequency of the measurement cycle is limited by the frequency range of changes in the field being measured. It is then shown that errors due to pick-up noises are given by the following expression

$$\frac{\delta H_0}{H_0} = k \frac{F}{H_0^2} \sqrt{\frac{\Delta f^3 B}{P}} \frac{1}{\sin^2 \theta} \quad (8)$$

Card 1/2

The threshold of sensitivity and ... S/785/61/000/008/005/005
E194/E155

where: k - a constant; F - the highest frequency of the magnetic field being measured; Δf - the bandpass width of the pick-up; B - the noise factor of the pick-up signal amplifier circuit; P - the polarising power of the pick-up winding; θ - the angle between the measured field and the pick-up axis.

This expression shows that the error and sensitivity threshold of a nuclear resonance magnetometer depend on the band-pass width of the pick-up, its polarising power and also on the field strength and on the highest frequency in the field being measured. For a given size of pick-up the errors can only be reduced by constricting the band-pass or increasing the polarising power, both of which offer little prospects of improving existing instruments. A worked numerical example illustrates that in using these magnetometers it is necessary to allow for the unavoidable impairment of their measuring properties as the frequency of alteration of the field being measured increases.

Card 2/2

LYSENKO, A.P.; SOKOLOV, N.F.; MIKHLIN, B.Z.

Methods of measuring weak magnetic fields in a wide spectrum
of frequencies. Geofiz. prib. no.9:25-36 '61. (MIRA 15:11)
(Magnetism, Terrestrial--Measurement)

MIKHLEN DAVID MIKHAYLOVICH

DECEASED
c1960

1961/3

SEE ILC

BIOCHEMISTRY

ACC NR: AP6032038

SOURCE CODE: UR/0411/66/002/005/0538/0543

AUTHOR: Mikhlin, E. D.; Yerofeyeva, N. N.

ORG: Institute of Biochemistry, AN SSSR, im. A. N. Bakh (Institut biokhimii AN SSSR)

TITLE: Growth stimulants in the biomass of thermo-philic methane bacteria. Report one.

SOURCE: Prikladnaya biokhimiya i mikrobiologiya, v. 2, no. 5, 1966, 538-543

TOPIC TAGS: bacteria, ~~thermophilic bacteria~~, methane bacteria, biomass, growth regulation, growth stimulator, distillation, bacteriology, vitamin

ABSTRACT: Fermentation of distillery residues by thermophilic methane bacteria yielded a biomass containing growth regulators with more growth-stimulating effect than equivalent doses of crystalline vitamin B₁₂. The substances were identified as organic compounds unrelated to the B vitamins in the biomass.

[WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: 25Mar66/ ORIG REF: 010/ OTH REF: 007/

Card 1/1

UDC: 613.663

MIRKHAJN, E. D.

Distr: 4E2n(j)/4E4

The use of liquid products from the pyrolysis of vulcanized rubber in rubber stocks. E. D. Mirkhajn, L. I. Portokalova, and N. N. Zagmenakli. Vulkanshyra, Volume 16, No. 9, 16-21 (1967).—In a rubber oil (I) (d. 0.88-0.91) prep'd by fractional pyrolysis (200-400°) of waste-tire SKB-30 stocks, SKB, SKB-30, and a type of Neoprene show unlimited swelling; curves of swelling kinetics at 23-6° are given. I replacing Vaseline oil in SKB stocks increases O₂ resistance, and retards crack growth in dynamic flexing. Adding 20 parts I on 100 SKS-30 is equiv. (in viscosity) to plasticizing it thermally; while cured stocks with I have similar tensile strength and better elongation at break, elasticity, and dynamic fatigue life than thermally plasticized stocks with a higher rubber content. I can also be used in natural rubber.

Malcolm Anderson

7
2 May
2
JF

See Reel 1 and Rubber & Latex Articles

32-12-30/71

AUTHOR: Mikhlin, E.D.

TITLE: The Gasometric Method of Determining the Moisture Content of Rubber
(Gazometricheskiy metod opredelenija vlaghnosti reziny).

PERIODICAL: Zavodskaya Laboratoriya, 1957 Vol. 23, Nr 12, pp. 1466-1471 (USSR)

ABSTRACT: This method is based upon the chemical reaction of water with certain substances, in which the gaseous products are separated. The separated gas volume is measured and the quantity of water contained in the substance to be analyzed is determined. The substances which may be used for this purpose are: the metal hydrides (CaH_2 , LiAlH_4 and others) as well as calcium carbide (CaC_2). For the determination of the water content of non-vulcanized rubber metal hydrides are not suited. For the dissolution of a rubber sample distilled benzene is used. The determination of the water content was carried out by means of a device which is described here. It consists of two burettes which are connected in their lower part by means of a three-way pipe and are further connected to a vessel with a "sealing solution" by means of a tube. The first burette is enclosed in a cylindrical vessel filled with water and provided with a thermometer. In its upper part this burette is connected by means of a tube with relief valve

Card 1/2

The Gasometric Method of Determining the Moisture Content
of Rubber

32-14-36, 7

to a reagent vessel which, in turn, is dipped into a water trough. The second burette serves as a level indicator. The evaluation of results was determined according to the formula:

X = $\frac{VCK}{g} \cdot 100$, where X denotes the water content of the substance in % of the total value, V - the quantity of the acetylene separated in ml, g - the quantity of the substance to be analyzed, C - the coefficient of the transfer of gas to the normal stage, K - water content in g corresponding to 1 ml of separated acetylene. In this way the degree of moisture of various rubber materials as well as of vulcanized rubber is determined by the gasometric method by applying calcium carbide in the benzene medium, but on the condition that these materials contain no substances that are able to react direct with water. There are 3 figures, 2 tables, and 11 references, 10 of which are Slavic.

ASSOCIATION: Scientific Research Institute for Rubber Consumer Goods
(Nauchno-issledovatel'skiy institut rezinovykh izdeliy
smirovogo potrebleniya).

AVAILABLE: Library of Congress

Card 2/2 1. Rubber-Moisture-Gasometric determination

MIKHLIN, M.D.; MEL'NIKOVA, G.K.; ZAYTSEVA, V.D.; NIKITINA, S.A.; GRITSMAN,
Yu.Ye.; GORBOVITSKIY, Ye.B.; ERYUCHKOVA, O.S.; KONDRAT'YEVA, N.I.

Effect of rubber on drugs and the body. Report No.1: Present-day
views on the subject. Med.prom. 12 no.2:35-41 F '58. (MIRA 11:3)

1. Nauchno-issledovatel'skiy institut reziny i Nauchno-issledovatel'-
skiy institut eksperimental'noy khirurgicheskoy apparatury i
oborudovaniya.
(RUBBER--PHYSIOLOGICAL EFFECT) (DRUG INDUSTRY)

MIEHLIN, E.D., MEL'NIKOVA, G.K., ZAYTSEVA, V.D., NIKITINA, S.A., GRITSMAN,
Yu.Ya., GORBOVITSKIY, Ye.B., KRYUCHKOVA, G.S., KONDRAT'YEVA, N.I.

Effect of vulcanized rubber on drugs and the body. Report No.2.
(MIRA 11:9)
Med.prom. 12 no.8:8-12 Ag '58

1. Nauchno-issledovatel'skiy institut reziny i Nauchno-issledovatel'skiy
institut eksperimental'noy khirurgicheskoy apparatury i instrumentov.
(RUBBER--PHYSIOLOGICAL EFFECT)

S/138/59/000/C 2/005/006

AUTHORS: Mikhlin, E. D., Poretskaya, L. I., Pozin, A. A., Artem'yeva,
V. P., Gal'braykh, I. Ye., Shcherbakova, L. P., Nikiforova,
T. F.

TITLE: A Method for the Determination of the Tendency for Pore
Formation in Rubber Mixtures During Vulcanization ¹⁵

PERIODICAL: Kauchuk i Rezina, 1959, No. 12, pp. 23-28

TEXT: The authors stress the importance of controlling the rubber mixtures during vulcanization to avoid swelling and the formation of pores and to ensure the production of monolithic rubber articles. The presence of gases and steam due to moisture and the wrong composition of the rubber mixture can be harmful in this connection. Other causes of pore formations are listed. The gasometric method for moisture-determination is quoted (Ref. 1). The duration of this method, viz. 40 minutes for each determination, renders it unpractical for industrial purposes. The degree of porosity is determined by the specific gravity method (Ref. 2). However, the specific gravity changes during vulcanization, particularly if pore formations occur. The ratio of the specific gravities of the vulcanizate

Card 1/4

S/138/59/000/012/005/006

A Method for the Determination of the Tendency for Pore Formation in Rubber Mixtures During Vulcanization

and the rubber mixture is given in Formula 1. The relation between the moisture of the rubber mixture, the K value, i.e., the above-mentioned ratio, and the porosity of the vulcanizate was studied. The experimental procedure is outlined. The value of K was computed according to experimental data. Fig. 1 shows the instrument used for the determination of the specific gravity. The formula for the determination of the specific gravity before heating is given in Formula 2 and for determination after heating in Formula 3. The values of K obtained are listed in Table 1. The Authors used the gasometric method for determining the moisture in the rubber mixtures. Fig. 2 shows the relationship between the value of K and the moisture content of the initial rubber mixture according to the composition No. 151. The relationship which is obtained is explained by the fact that during the heating and vulcanization under relatively hard conditions (temperature 170-180°C) part of the moisture contained in the rubber mixture volatizes. A special method was applied to the determination of the moisture content and the dependence of the porosity on the K value and the moisture content in the case of press-molded galoshes at the "Krasnyy Treugol'nik" plant. It was applied in production to the control of rubber

Card 2/4

S/138/59/000/012, 005/006

A Method for the Determination of the Tendency for Pore Formation in Rubber Mixtures During Vulcanization

mixtures used in the manufacture of these overshoes, which, in turn, were vulcanized at atmospheric pressure and also in the manufacture of heels for shaped boots. As many as 89 rubber mixtures were tested in the plant and the results of the K values obtained are listed in Table 4. It can be seen from the table that in order to obtain monolithic overshoes vulcanized at atmospheric pressure the rubber mixtures must be characterized by a value of $K > 0.985$. The processing of rubber by the "straining" method causes an increase in the K value by 15 to 17%, both in industry and under laboratory conditions. Other tests were carried out for the K determination of rubber mixtures used in the manufacture of boot heels. The results are given in Table 6. A linear relationship exists between K and the monolithic structure of the boot heels manufactured by molding according to modern standard industrial procedures. The authors conclude that they were able to develop a qualitative method for the determination of the tendency of rubber mixtures for pore formation during vulcanization, and that this tendency is characterized by the value of K, which, in turn, depends on the moisture of the rubber mixture. The method recommended was tested in industry on CKB -60 (SKB-60) and CKC -30 (SKS-30) rubber-based materials and was found



Card 3/4

... and Latex Articles and the "Krasnyy Treugol'nik" Plant)

Card 4/4

MIKHLIN, E.D., kand. tekhn. nauk

Joint Conference of the Academy of Sciences of the U.S.S.R.,
the All-Union Academy of Agricultural Sciences, and the
Ministry of Agriculture of the U.S.S.R. on Biologically
Active Preparations in Cattle Breeding. Vest. AN SSSR 33
no.10:109-113 O '63. (MIRA 16:11)

MIKHLIN, E.D.; YEROFFYEVA, N.N.; SOLOV'YEVA, N.V., SIMONOVA, V.G.

Composition of the biomass formed during the methane fermentation
of stillage and some characteristics of its stimulating activity.
Mikrobiologija 33 no.2:210-215 Mr-Ap '64. (MIRA 17:12)

1. Institut biokhimii imeni A.N. Bakha AN SSSR.

ASATIANI, Vladimir Samsonovich; MIKHIL'EV, E.D., red.

[New methods of biochemical photometry] Novye metody
biokhimicheskoi fotometrii. Moscow, Nauka, 1965. 500 p.
(VIA 12: 1)

MURKIN, S.B.; CHURKINA, V.N.

Composition of the biomass formed during methane fermentation
of the distiller's waste. Prikl. biokhim. i mikrobiol. 1 no.1:
45-48 Jan/F 1965. (MIRA 18:5)

S. Institut biokhimi i mikrobiologii AN SSSR, Moscow.

ACC NR: AP6032038

SOURCE CODE: UR/0411/66/002/005/0538/0543

AUTHOR: Mikhlin, E. D.; Yerofeyeva, N. N.

ORG: Institute of Biochemistry, AN SSSR, im. A. N. Bakh (Institut biokhimii AN SSSR)

TITLE: Growth stimulants in the biomass of thermo-philic methane bacteria. Report one.

SOURCE: Prikladnaya biokhimiya i mikrobiologiya, v. 2, no. 5, 1966, 538-543

TOPIC TAGS: bacteria, ~~thermophilic bacteria~~, methane bacteria, biomass, growth regulation, growth stimulator, distillation, bacteriology, vitamin

ABSTRACT: Fermentation of distillery residues by thermophilic methane bacteria yielded a biomass containing growth regulators with more growth-stimulating effect than equivalent doses of crystalline vitamin B₁₂. The substances were identified as organic compounds unrelated to the B vitamins in the biomass.

[WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: 25Mar66/ ORIG REF: 010/ OTH REF: 007/

Card 1/1

UDC: 613.663

MIKHILIN, E.D.

Chemicalization of the animal husbandry. Izv. AN SSSR. Ser.
biol. no. 5:803-806 S-O '65. (MIRA 18:9)

1980, 1981, 1982, 1983,

Antibiotika und Chemotherapie

Fachseminar der Medizinischen Akademie

Lit. 3: RDP-3, 1984-1985.

1. Institut für Medizinische Biologie
Staatliche Universität Chemnitz.

CA

HC

Effect of partial pressure of oxygen on the oxidation of sorbitol to sorbose by *Aerobacter melanogenum*. B. Michlin and I. Rosenberg (Vitamin Inst., Moscow). Biochimica et Biophysica Acta, 1960, 444-7 (1960).—The oxidation of sorbitol to sorbose by *A. melanogenum* is reduced to an atm. of 80-100% O₂ when the medium is vigorously shaken. The excess O₂ produces a toxic effect on the bacteria and diminishes their number to 25-35% of that found when air is employed.

H. Priestley

APPROVED FOR RELEASE: 06/14/2000
British Abst.
A III
Aug. 1953
Biochemistry of Micro-Organisms,
Including Fungi

(2) Effect of catalase on the oxidation of sorbitol by heterotrophic micro-organisms. P. D. Mitchell (1953). Biochemical Journal, 56, 292-96. *Aerobacter melanogenum* and *A. suboxydans* were grown on a medium consisting of autolysed bakers' yeast with 12% of sorbitol. Addition of catalase prep. (made from liver and blood) to the heat-sterilised medium caused increase in the rate of growth of the culture and of the rate of oxidation of sorbitol. This is taken as evidence of the formation of H₂O₂ in the reaction, and it is thought that in the absence of catalase the H₂O₂ formed may inhibit the growth of the organisms. D. H. Smyth

MIKHLIN, B. B.; GOLYSHEVA, M. G.; KEPPEN, V. A.

"Influence of the Conditions of Aeration on the Development of the Acid Ketogenic Microorganisms," Mikrobiologiya Vol 21 Sep-Oct 1952 (pp 521-527).

Translation 1609595, 5 Jun 53

MIKHLIN, Ye.D.; GOLYSHEVA, M.G.

Effect of histidine on oxidation of sorbite by Acetobacter melanogenum.
Doklady Akad. nauk SSSR 82 no.3:439-441 21 Jan 52. (CLML 21:5)

1. Presented by Academician A.I. Oparin 23 November 1951.

E. D. MIKHLIN

Dobrolyubov, P. L. Mikhlin and M. G. Golysheva.
Dobrolyubov, Nauk S.S.R. 82, 430-41(1952); cf. C.A.
45, 18607.—L-Histidine added to nutrient mixt. of 12-15%
of sorbitol and autolyzed bakers' yeast aids the development
of the organisms and accelerates the oxidation of sorbitol
(10-20%).
C. M. Kozoladoff

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001134120014-4"

MIKHAILED

USSR

Reducing the loss of ascorbic acid in the production of
vitamin concentrates from wild rose hips. R. D. Mikhlip,
Trudy Vsesoyus. Nauch.-Issledovatel. Vitamin. 1952,
90-3(1953).—Ann. translation.
B. G. Levine

MIKHLIN, E.D.; GOLYSHEVA, M.G.; KEPPEN, V.A.

Influence of aeration conditions on growth of ketogenic acetic acid
organisms. Mikrobiologiya 21, 521-7 '53. (MLRA 5:9)
(CA 47 no.14:7034 '53)

1. All-Soviet Vitamin Research Inst., Moscow.

MIKHIN, E. D.

Oxidation of sorbitol to sorbose in liquid-gas system.

R. D. Mikhlin, M. G. Golysheva, I. S. Rozenberg, N. A. Krylov, and V. A. Kepen. *Trudy Veterinaz. Nauch. Issledovatel. Vitamin. Inst.*, 5, 69-73 (1954).—Oxidation of sorbitol to sorbose by action of *Acetobacter melanogenes* is attained in moving thin films; *A. suboxydans* also is effective. The oxidized liquid medium is cyclically converted to foam, which is then reconverted to the liquid state. Under these conditions 8-10 hrs. suffice for the reaction. At pH 3.8-5.2 the count of the bacteria is higher in the foam than in the liquid. G. M. Kosolapoff

MIKHLIN, E.D.; GOLYSHEVA, M.G.

Effect of methylene blue on oxidation of sorbitol into sorbose by
Acetobacter melanogenum. Biokhimiia 19 no.5:549-556 9-0 '54.
(MLRA 7:11)

1. Vsesoyusnyy nauchno-issledovatel'skiy vitaminnyy institut, Moskva.

(ACETOBACTER,

melanogenum, oxidation of sorbitol into sorbose, eff.
of methylene blue)

(SORBITOL,

oxidation into sorbose by Acetobacter melanogenum, eff.
of methylene blue)

(SORBOSE,

oxidation from sorbitol by Acetobacter melanogenum, eff.
of methylene blue)

(METHYLENE BLUE, effects,

on sorbitol oxidation into sorbose by Acetobacter
melanogenum)

BUKIN, V.N.; MIKLIN, E.D.; BYKHOVSKIY, V.Ya.; PANTSAYA, Ye.S.; LOGOTKIN, I.S.

Producing vitamin B₁₂ by processing waste products of the distilling industry with thermophilic methane bacteria. Vit. res. i ikh isp. no. 5:90-111 '61. (MIA 15:1)

1. Institut biokhimii im. A.N.Bakha AN SSSR i TSentral'nyy nauchno-issledovatel'skiy institut spirtovoy promyshlennosti, Moskva.
(CYANOCOBALAMINE) (BACTERIA, METHANE-PRODUCING)
(DISTILLING INDUSTRIES-BY-PRODUCTS)

MIKHLIN, E.D.; SHAKHOVA, M.F.; LUK'YANOVA, L.V.; Prinimala uchastiye:
KISELEVA, I.F., laborantka

Phytol, a preparation from peppermint wastes. Trudy VNIVI 8:57-65
'61. (MIRA 14:9)

1. Laboratoriya pererabotki rastitel'nogo syr'ya i khimiko-analiti-
cheskaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo
vitaminnogo instituta.
(Phytol) (Peppermint)

MIKHLIN, E.D.; TARASOVA, N.V.; RABAYEVA, M.Yu.

Use of molasses and propionic acid bacteria in the production of
vitamin B₁₂. Trudy VNIVI 8:71-79 '61. (MIRA 14:9)

1. Laboratoriya po pererabotke rastitel'nogo syr'ya Vsesoyuznogo
nauchno-issledovatel'skogo vitaminnogo instituta.
(Propionibacterium) (Molasses) (Cyanocobalamin)

MIKHLIN, E.D.; CURVICH, A.I.; CHUKAYEVA, V.N.

Method for determining small amounts of acetone in oils. Trudy
VNIVI 8:103-104 '61. (MIRA 14:9)

1. Laboratoriya po tekhnologii pererabotki prirodnogo syr'ya
Vsesoyuznogo nauchno-issledovatel'skogo vitaminnogo instituta.
(Acetone) (Oils and fats--Analysis)

MIKHLIN, E.D.; YEROFYEVA, N.N.; SOLOV'YEVA, N.V.; SIMONOVA, V.G.

Growth stimulating activity of the biomass formed during the
methane fermentation of distiller's waste. Vit. res. i ikh
isp. no.6:93-101 '63. (MIRA 17:1)

1. Institut biokhimii imeni A.N. Bakha AN SSSR, Moskva.

FILIPPOV, Vladimir Vasil'yevich; SUKHORUKOV, K.T., doktor biol. nauk,
otv. red.; MIKHLIN, E.D., red.izd-va; KASHINA, P.S., tekhn.
red.

[Biotin in plants and animals] Biotin v rastitel'nom i zhivot-
nom organizmakh. Moskva, Izd-vo Akad. nauk SSSR, 1962. 231 p.
(MIRA 15:2)
(Plants--Biotin content) (Animals--Biotin content)

MIKHLIN, E.D.; YEROFEYEV, N.N.; SIMONOVA, V.G.

Effect of various preparations of vitamin B₁₂ and its
mixtures with biomycin on the growth of animals. Vit. res.
i ikh isp. no.6:74-92 '63. (MIRA 17:1)

1. Institut biokhimii imeni A.N. Bakha AN SSSR, Moskva.

BUKIN, V.N., et al., red.; KIEBELL, E.I., red.

[Vitamin B₁₂ (panamid acid); its properties, function and application] vitamin B₁₂ (panamid acid);
svyazi, funktsii i primenie. Moscow, Lurka, 1975.
271 p. (VMA 18; 1c)

1. Akademiya nauk SSSR, Institut biokhimii. 2. chief
correspondent AN SSSR (for author).

16.6100,24.6510

SOV-12-6-1

AUTHORS: Mikhail, E. Ya., Stavinskij, I. S.

TITLE: A Study of Neutrons Interacting with α , γ , and
 π^+ Nuclei. (Optical Model of Nucleus-Particle
Interaction at the Ei = 10 MeV)

PERIODICAL: Atomnaya energiya, 1971, Vol. 29, No. 6 (in Russian)

ABSTRACT: In addition to the potential barrier mechanism of interaction of π^+ -mesons with nuclei, the interaction of nuclei is of practical importance for compilation of transfer characteristics of most effective interactions. In this paper the authors attempt to extend the application of optical models of nucleus-particle interaction to description of elastic nuclear scattering of neutrons by C^{12} , and C^{12} and O^{16} in the energy range of 10-100 MeV. The cross section in the energy region discussed is approxi-

Card 1/10

A Study of Neutrons Interactions With Be^{10} , Li^{12} , and C^{12} Nuclei Using Optimal Momentum Transfer Scheme for the $\text{E}(\text{F})\text{P}$ Nucleus. Letter to the Editor

use of real potentials. The authors used a simplified rectangular potential in the usual way with a constant spin-orbit term $\alpha(\mathbf{l}, \mathbf{s})$ and zero depth of the effective rectangular potential. In addition, it is their own assumption that the scheme one should always possibility that different potentials may be different for various partial waves. Also, due to the existence of the centrifugal barrier, neutrons with higher values of orbital angular momentum l are displaced toward the edge of the nucleus and spend most of the time in the "tail" of the potential. This is quite probable, with increasing l , a decrease in the depth of the effective rectangular potential and an increase of its radius. In this situation there, however, may be limit to which the dimensions are comparable to the size of the nucleus with large potential gradients. The main purpose of this paper is, according to the authors, the departure from the concepts of the simple rectangular

Card 2/10

A Study of Neutrons Interactions With He^4 ,
 C^{12} , and O^{16} Nuclei Using Optical Model of
Nucleus. Letter to the Editor

77247

SOV/89-8-2-12/30

potential common to all partial waves taking part in the scattering. To achieve a satisfactory description of the elastic neutron scattering, the parameters of the rectangular potential for each partial wave were chosen in such a way as to supply not only the right position and width of the single-particle resonances observed in the total cross section, but also to give the binding energy of the corresponding single particle bound states. Such states of the compound nucleus which correspond to the motion of the outer nucleon in the average potential of the remaining nucleus in its ground state the authors call the single-particle state. Reduced width of such a level must be of the order of the single-particle Wiegner limit. In the case of a rectangular well (radius R_0 , depth V_0), scattering phase is a known function of R_0 and V_0 .

$$\delta_{L+1} = \delta_{L+1}(r, V).$$

Card 3/10

A Study of Neutrons Interactions With He^4
 C^{12} , and O^{16} Nuclei Using Optical Model of
Nucleus. Letter to the Editor

77247

30V/89-8-2-12/30

where

$$r = \sqrt{\frac{2M}{\mu}} R_0 + \sqrt{\frac{4\mu}{h^2}(E - V_0)} R_0$$

μ is the reduced mass of the system neutron-target nucleus; and E is the kinetic energy of that system in the center of mass energy of coordinates. The width of the single-particle state is also a function of

x and X : $\Gamma_{1+1/2} = \Gamma_{1+1/2}(x, X)$. Knowing the position and the width of the observed single-particle resonance one can obtain two relations for determination of V_0 and R_0 . Further informations about V_0 and R_0 may be obtained from the known values of low-energy cross sections and the positions of bound single-particle levels. Table 1 shows the computed values for V_0 , R_0 , and α_1 together with the experimental data by Ajzenberg, Lauritsen, Huges, and Harvey (see references).

Card 4/10

77247 30V/89-8-12, 30

Table 1. Values of R_0 , V_0 , and α_1 .

Element	Wave	σ	τ	ϵ	β	Notes
		R_0	V_0	α_1		
He		2.40	38.0			At low energies, $\sigma_0 = 0.8$ barn, phase analysis
	$P_{1,1}$	3.2	22.0			At low energies, $\sigma_0 = 0.8$ barn, phase analysis
	$P_{1,2}$	1.0	1.0			At low energies, $\sigma_0 = 0.8$ barn, phase analysis
		2.7	50			At low energies, $\sigma_0 = 0.8$ barn, binding energy of the deuteron 1.46 mev
C	$P_{1,1}$	3.0	37.0			The 31 level with 1.67 mev excitation energy was assumed as 'deut' state
	$P_{1,2}$	1.0	1.0			Binding energy of the basic state $P_{1,2}$ 4.95 mev; phase analysis
	$d_{3,2}$	3.0	43			Binding energy of the 31 level 1.67 mev
	$d_{3,2}$	3.0	43			Resonance at $E = 7.65$ mev; $\Gamma = 1.2$ mev
	$P_{1,2}$	3.7	29			Radius and shape of maximum cross section at 20 mev

Card 5/10

77047 304/89-8.2-12/50

Table I (cont'd.)

Card 6/10

A Study of Neutrons Interactions With C^{12} , O^{16} , and Si^{28} Nuclei Using the Fermi Gas Model. Letter to the Editor

In this paper, calculations are made of the total cross sections, differential distributions, and single-particle distributions for the interaction of neutrons with C^{12} , O^{16} , and Si^{28} nuclei using the Fermi gas model. The single-particle distributions are calculated from the Fermi-Wigner formula. The differential distributions are calculated from the Fermi gas model. The total cross sections are calculated from the Fermi gas model. The discrepancies with the experimental data are discussed, and the parameters of the Fermi gas model (R_0 and R_1) are determined.

Upon the authors' best knowledge, this model was first proposed by Adair (see references). It is found that the model gives a large departure from the experimental data at small angles, causing an unphysical behavior of the differential distributions. In other cases (e.g., O^{16}), the agreement between the calculated and observed differential distributions is good.

Card 7/10

A Study of Neutrons Interactions With H_2^+ , D_2^+ , C^{12} , and O^{16} Nuclei Using Optical Model of Nucleus. Letter to the Editor

Sov. At. Ener.

of energies. This makes it possible to estimate angular distribution of scattering at low energy and to compare it with the corresponding experimental data. Later, it turned out that the same values of the angles of the scattering can be obtained by averaging over the angle θ the value of $\langle \cos \theta \rangle$ and the average quantity of energy loss ξ . A value of the coefficient ξ which is water computed from Table 1 agrees satisfactorily with experimental data by Kurnegli and G. (Atomnaya energiya, 6, No. 1, p. 107, 1958). We note that the $\langle \cos \theta \rangle$ values given by F. Zweifel and Harwitz (see reference) (Sov. J. Nucl. Physics, Baldinger, Huter, and Prostek (Heil., 1957, p. 142 (1958)) are too small. In addition to the data by Jata, their $\langle \cos \theta \rangle$ values for $E = 10^{-2}$ mev have values in the E region between approximately 2.5 mev, while the experimental data are at

Card 8/10

A Study of Neutrons Interactions With He^4 ,
 C^{12} , and O^{16} Nuclei Using Optical Model of
 Nucleus. Letter to the Editor

77247

SOV/89-8-2-12/30

Table 2. Values of $\langle \cos \theta \rangle$ and ξ .

O^{16}			C^{12}			O^{16}			C^{12}		
E_n, mev	$\langle \cos \theta \rangle$	ξ	E_n, mev	$\langle \cos \theta \rangle$	ξ	E_n, mev	$\langle \cos \theta \rangle$	ξ	E_n, mev	$\langle \cos \theta \rangle$	ξ
0.41	0.09	0.136	0.43	0.11	0.148	2.9	0.49	0.101	4.5	0.49	0.087
0.435	0.276	0.091	1.0	0.13	0.135	3.1	0.25	0.094	5.0	0.54	0.077
0.48	0.49	0.064	1.5	0.19	0.157	3.3	0.18	0.103	6.0	0.69	0.052
0.7	0.15	0.106	2.0	0.16	0.140	3.5	0.27	0.091	6.3	0.75	0.042
0.9	0.079	0.115	2.07	0.09	0.131	3.8	0.39	0.077	6.6	0.5	0.083
1.03	0.059	0.118	2.1	0.16	0.140	4.1	0.35	0.081	7.2	0.45	0.141
1.1	0.037	0.120	2.9	0.18	0.137	4.3	0.51	0.061	7.4	0.32	0.113
1.32	0.42	0.073	3.0	0.27	0.122	4.7	0.37	0.079	8.0	0.50	0.083
1.41	0.16	0.105	3.3	0.13	0.143	7.0	0.23	0.090	9.0	0.50	0.083
2.0	0.32	0.111	3.66	0.06	0.136	14	0.37	0.079	10	0.51	0.082
2.4	0.14	0.108	4.1	0.30	0.117				14	0.21	0.132

Card 9/10

A Study of Neutrons Interactions With He⁴,
C¹², and O¹⁶ Nuclei Using Optical Model of
Nucleus. Letter to the Editor

77247

SOV/89-8-2-12/30

possibility for $\langle \cos \theta \rangle$ to be negative. The fact that the optical model describes well the elastic scattering of neutrons of sufficiently small energies on He⁴, C¹², and O¹⁶ is probably due to the stability of these nuclei. The incoming neutron interacts, therefore, only weakly with them, and does not introduce nuclear deformation, and one can talk about an interaction of the neutrons with the nucleus as a whole. A. S. Davidov, L. N. Usachev, and V. N. Neudachin showed interest and gave critical remarks. There are 2 tables; and 7 references, 1 Soviet, 1 Swiss, 5 U.S. The U.S. references are: F. Ajzenberg, T. Lauritson, Rev. Mod. Phys., 27, 77 (1955); D. Huges, J. Harvey, Neutron Cross Sections, U.S.A., BNL-325 (1955); H. Feshbach, C. Porter, V. Weisskopf, Phys. Rev., 96, 448 (1954); P. Zweifel, H. Hurwitz, J. Appl. Phys., 25, 1241 (1954); R. Adair. Phys. Rev., 92, 1491 (1953).

SUBMITTED: May 30, 1959
Card 10/10

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4

MIKHLIN, E.Ya.

Motion of pores in a solid due to the thermal migration of
atoms along their surface. Fiz. tver. tela 6 no.9:2819-2824
S '64.

(MIRA 17:...)

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4"

36772

S/089/62/012/005/003/014
B102/B104

26.221

AUTHORS: Agranovich, V. M., Mikhlin, E. Ya.

TITLE: Theory of swelling of porous material

PERIODICAL: Atomnaya energiya, v. 12, no. 5, 1962, 385-391

TEXT: The complex mechanism entailed in the swelling of fissile material is not yet known in detail (cf. B. Hayward, G. Bentle, Second Geneva Conference on Peaceful Uses of Atomic Energy, 1958, Paper No. 617). The authors have developed a theory on the basis of a simplified model, with special consideration of the processes occurring before swelling. The pores are assumed to be evenly distributed, spherical and of equal radius (R), and should begin to grow only when the elastic limit is reached as a consequence of fission fragment (gas) diffusion. This moment is considered as the beginning of swelling. The filling of the pores with gaseous fission products (one kind only) is described by ψ , a variable defined by

$$d\psi = 4\pi R D dt, \quad (3a)$$

Card (1/6)

Theory of swelling of porous material

3/089/62/012/005/003/014
B102/B104

$$\Phi = 4\pi \int_0^t R(t') c(t') D(t') dt' \quad (3b).$$

$\xi(t)$ can be determined if the gas concentration c is known:

$$\begin{aligned} \Phi(t) &= 4\pi c(0) \int_0^t e^{-n\tau(t')} D(t') R(t') dt' + \\ &+ 4\pi \int_0^t R(t') D(t') \int_0^{t'} a(t'') e^{n(\tau(t'') - \tau(t'))} dt'' \end{aligned} \quad (14)$$

$$\tau(t) = 4\pi \int_0^t R(t') D(t') dt' \quad (15);$$

Card 2/6

Theory of swelling of porous material

S/089/62/012/005/003/014
B102/B104

n is the pore concentration and D the gas diffusion coefficient. The swelling kinetics is described by $\nu_m(\frac{t}{\tau}) = \frac{n}{m!} \left(\frac{t}{\tau}\right)^m e^{-\frac{t}{\tau}}$, $m = 0, 1, 2, \dots$. These relations hold, within the framework of the model, for any $D(t)$ and $a(t)$; a is the total amount of gaseous fragments arising per sec and per cm^3 . The period t_0 between the moment when fission starts ($t=0$) and that when swelling begins is calculated. For $t < t_0$, $D=\text{const}$, $c(0)=0$, and $a(t) = R_0$,

$$\Phi(t) = \frac{b\tau}{n} - \frac{b}{n\tau} (1 - e^{-n\tau}), \quad (15)$$

$$\begin{aligned} v(t) &= 4\pi R_0 D t; \\ b &= a/4\pi D R_0. \end{aligned} \quad (16a)$$

$$(16b)$$

Card 3/6

Theory of swelling of porous material

S/089/62/012/005/003/014
B102/B104

hold; $a = \text{const}$ denotes here the fragment formation rate. The gas is considered as being ideal, its pressure in a pore containing $\bar{m}(t)$ gaseous fragments, is $P = \bar{m}(t)kT/V_0$, and, since $\bar{m}(t) = \bar{\rho}(t)$, $P_{\text{crit}} = \bar{\rho}(t)kT/V_0$ at t_c . With Y , the elastic limit, and γ , the surface tension coefficient, $P_{\text{crit}} = 2Y/3 + 2\gamma/R_0$ and

$$n\tau - (1 - e^{-n\tau}) = \frac{\left(\frac{2}{3}Y + \frac{2\gamma}{R_0}\right)V_0n^2}{bkT}. \quad (20).$$

Two limiting cases are considered: 1) $d \ll 1$,

$$d \equiv \frac{4\pi\left(\frac{2}{3}Y + \frac{2\gamma}{R_0}\right)V_0n^2}{akT} DR. \quad (21),$$

Card 4/6

Theory of swelling of porous material
then $n^2 r^2 / 2 = d$ or

S/089/62/012/005/003/014
B102/B104

$$t_c = \sqrt{\frac{\left(\frac{2}{3}Y + \frac{2\gamma}{R_s}\right) v_0}{2\pi D R_s a k T}}; \quad (22).$$

2) $d \ll 1$, $n \gg 1$, $n' = d$, and

$$t_c = \frac{\left(\frac{2}{3}Y + \frac{2\gamma}{R_s}\right) v_0}{a k T}. \quad (23).$$

$d \ll 1$ corresponds to $t_0 \gtrsim t_c = 1/4\pi D R_s$. If creeping is taken into account and is assumed to satisfy the law $dv_r/dr = -(\sigma_\theta - \sigma_r)^8/k$,

$$P(t) < \frac{2}{3} Y + \frac{2\gamma}{R_s}. \quad (28)$$

Card 5/6

Theory of swelling of porous material

3/089/62/012/005/003/014
B102/B104

$$\tau_{c\alpha} > \frac{1}{\alpha} \frac{\kappa}{\left(\frac{2}{3} r + \frac{2\gamma}{R_0} \right)^s}. \quad (29).$$

v_r is the radial deformation rate, σ_θ and σ_r are the normal stresses and κ and s are empirical constants; the subscript α refers to creep; ($t_{c\alpha}$, t_c). If the beginning of swelling is caused by creeping,

$$P(t) \approx \frac{atkT}{nV(t)} < \frac{atkT}{nV_0}. \quad (33)$$

$$\tau_c > \tau_{c\alpha} > \left[\frac{(s+1)\kappa}{\alpha} \right]^{1/s+1} \left(\frac{nV_0}{atkT} \right)^{s/s+1}. \quad (35).$$

For uranium, t_c is estimated for the irradiation temperatures 327, 427, 527, 727°C: 1.2 years, 200 hrs, 130 hrs, 60 hrs.

SUBMITTED: July 5, 1961
Card 6/6

AGRANOVICH, V.M.; MIKHLIN, E.Ya.; SEMENOV, L.P.

Kinetics of the swelling of fissionable materials caused by the separation of the gaseous phase from a supersaturated solid solution. Atom. energ. 15 no.5:393-403 N '63.
(MIRA 16:12)

MIKHLIN, G.

Variational method for the solution of boundary value problems.
Uch.sap.Lon.um. no.144;151-164 '52.
(Elasticity) (Calculus of variations) (MIRA 9:6)

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4

Apparatus for metering milk of lime solution in sugar
production. L. A. Mikhlin and M. I. Kulik. U.S.S.R.
102,287. Mar. 25, 1960. M. Hoseh

2

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4"

MIKHLIN, I.A.

Automatic control of diffusion measuring tanks in sugar refineries
[with summary in English]. Avtomatyka no.4:59-66 '58.

1. Kiyevskiy opytnyy zavod "Sakhavtomat."
(Sugar manufacture) (Automatic control)

(MIREA 12:1)

PLATE I BOOK EXTRAS

Automatica and SSGN. Institut automatique et télécommunications
[Automatica and SSGN. Institute of Automatic Control and Telecommunications]
[Borisov] [Moscow] Izdat. Akad. Nauk SSSR [1960]. 3 v. 600 pp. 8vo. 1200 rubles.
opposite printed.

Ed.-in-Chief: V. A. Tikhonov, Doctor of Technical Sciences, Professor; Ed. of Publishing Committee: V. M. Goryainov, Head, Dept. of Applied Mathematics.

PRINCIPLE. This collection of reports is intended for scientists and engineers engaged in the study of automation.

CONTENTS. The collection contains reports presented at the 6th Conference of Young Scientists of the Institute of Mathematics and Telecommunications of the Academy of Sciences (SSGN) in January 1959. The collection covers a wide range of scientific and technical problems and with automatic control. No personnel lists are attached. References to accompany each report.

Report 1.2. Study of Optimal Time-Circuit Dynamics
For increasing various factors which have a negative influence on accuracy and output power, the author notes that the realization of additional modulations which in turn results in instability especially in high-power systems. A considerable improvement is necessary here. The solution will be realized by the introduction of additional vibrations with a selected frequency and amplitude superimposed on the main one. This will result in the optimization of the transient and in the linearization of the nonlinear system. Although numerical computational methods are conveniently used in optimizing systems, it would be possible to use a graphical method. The author presents details in numerical analysis of the operation of a nonlinear ultrahigh-current generator under the supervision of V. V. Petrov and also includes some directions for its design. There are 3 references, all Soviet.

Report 1.3. Application of Parameters in Design Practice
The author describes theoretical and experimental investigations of standard properties of objects of automatic control. This work was made under the direction of Professor V. A. Tikhonov, Doctor of Technical Sciences and with technical consultation of Professor P. M. Slin'ko, Scientific Scientist, Institute of Control. Commission of the Soviet Union in Pulse-Pulse Systems of High-Power Accelerators.

The author presents a method of delay compensation in control systems with pulse-width modulation which are essentially nonlinear. He discusses how, in the presence of external transient load, it is natural that the control system which obeys the original at the instant of the pulse onset should exhibit an extrapolation, a nonlinear distortion filter. After the determination of the parameters of such systems, there are 10 references.

Report 1.4. Selection of Measured Quantities and Regulating Elements in a Control System With Several Controlled Quantities
The author presents a more general statement of the problem of multi-variable control systems namely the problem of choosing a controller for controlled disturbances (acting upon the equipment) to each of the elements in the work. It is pointed out that the necessary conditions of selection and of regulating elements and also to prove stability on principle. The distinctive features of the control system structure. There are 6 references, all Soviet.

MIKHLIN, I.A., inzh.; PAKSHVER, A.B., doktor tekhn. nauk

Continuous deaeration of viscous solutions. Izv. vys. ucheb.
zav.; tekhn. leg. prom. no.5:51-55 '63. (MIRA 16:12)

1. Sovmestnaya issledovatel'skaya laboratoriya Kiyevskogo
kombinata iskusstvennogo volokna i Kiyevskogo eksperimental'nogo
zavoda (for Mikhlin). 2. Vsesoyuznyy nauchno-issledovatel'skiy
institut sinteticheskikh volokon (for Pakshver). Rekomendovana
kafedroy tekhnologii iskusstvennykh i sinteticheskikh volokon
Kiyevskogo tekhnologicheskogo instituta legkoy promyshlennosti.

MICHIN, I.I., inzhener.

Preparing bent parts of pipe lines under factory conditions. Vest.mash.
33 no.5:41-42 My '53. (MLRA 6:5)

1. Vsesoyuznyy nauchno-issledovatel'skii institut Stroyneft'. (Fittings)

AUTHOR: Fal'kevich, A.I. and Vazelin', A.G., Candidates of Technical Sciences; Borchenko, Yu.I. and Mikhlin, I.I., Engineers

TITLE: Automatic Overhead Pipe Welding Under Flux /Avtomaticheskaya svarka pod flyusom trub v potolochnom polozhenii/

PERIODICAL: Svarochnoye proizvodstvo, 1978, Nr 11, pp 10-11, 12.

ABSTRACT: Information is presented on experimental data obtained by the welding laboratory at VNIIIT in developing a new method of overhead welding (suggested by welding operator I.A. Borozov). It can be applied for the overhead welding of the first layer of carbon and low alloy steel pipes of 114 - 76 mm in diameter without support rings and with flux fed into the arc space by means of a worm. The main technological factors of the new method are the displacement of the electrode from the lowest point of the pipe and the force of pressure upon the flux pad. The method ensures a stable burning of the arc, and a satisfactory accumulation of the weld metal. Optimum welding parameters permit the obtaining of a 4 - 5 mm thick first layer with high mechanical properties. Special devices developed at VNIIIT with the participation of engineers A.I. Karbachinskiy and N.I. Shlyuyev are used in the new method.

Card 1/2

Automatic Overhead Pipe Welding Under Flux

77-110-11-2-1

which is recommended for industrial purposes.
There are 6 tables, 1 diagram, 1 oscillogram, and 5 photos.

ASSOCIATION: VNIIT

1. Pipes—Arc welding
2. Arc welding—Equipment
3. Electric arcs—Performance

Card 2/2

MIKHLIN, I.I., inzh.

Mechanical pipe cutting and preparing of edges for welding
in the field. Stroi. truboprov. 7 no.10:30-31 0 '62.
(Pipe) (MIRA 15:11)

MIKHLIN, I.I.; SPIRIDONOV A, I.P.

Cleaning the interior of pipelines with spheres (from foreign periodicals).
Stroi. truboprov. 7 no.11:28-29 N '62. (MIRA 1962)
(Pipelines)

MIKHLIN, I.I.; LYSENKO, L.V.

Prefabricated details of crossings. Stroi.truboprov. 8 no.7;39-40
Jl '63.
(MIRA 17:2)

LYSENKO, L.V.; MIKHLIN, I.I.

Equipment for gas and electric welding of nonrotatory joints.
Stroi. truboprov. 9 no.1:37 Ja '64.
(MIRA 17:3)

MIXHLIN, M.G.

Differentiated norms for raw stock consumption in manufacturing
boxes. Der.prom. 9 no.7:25 Jl '60. (MIRA 1):? (Wood-using industries)
(Boxes)

MUSIUM M.S.

Processes and perspectives

Changes in metabolism in cases of general and local purulent infection. II. The glutathione and catalase of the blood in cases of general and local purulent infection. M. S. Mikhlin and J. M. Rakhimalevich. *Klin. Med. (U. S. S. R.)* 14, 1493-7 (1938); *Chem. Zentr.* 1938, I, 3075. In general purulent infection there is a pronounced decrease in the glutathione content of the blood. In the case of local purulent infections that are progressing favorably the glutathione level is normal. Changes indicate a process of septic character. The catalase content of the blood also shows a certain relation to the seriousness of the infection; even in the case of local infection a reduction in catalase content is sometimes observed. These findings lead to the assumption that in cases of general or serious local infection there is a reduction in oxidation processes in the organism. M. G. Moore.

M. C. Mante

436.914 METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4"

MIKHLIN, M.S.

Mikhlin, M.S. - "A dynamic study of intermediary metabolism in connection with physical stress as a method of functional diagnostics," Trudy Krymsk. med. in-ta im. Stalina, Vo . XII, 1948, p. 39-42.

SO: U-3950, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

MIKHLIN, M. S.

Mikhlin, M. S. "Metabolism during suppurative infection," Trudy Krymsk,
med. in-ta im. Stalina, Vol. XII, 1949, p. 25-37

SO: U-3850, 16 June 53, (Letopis 'Zurnal 'nykh Statoy, No. 5, 1949)

Murashko, M. Ye.

"The Effect of Pressure on the Crystallization of Supercooled Lipids." Cand
Phys-Math Sci, L'vov State Inst (sic), L'vov, 1954. (RZhKh, No 1, Ja 1955)

Survey of Scientific and Technical Dissertations Defended at Soviet Higher
Educational Institutions (13)
SC: Sum. No. 528, 29 Jul 55

GURSKIY, N.P.; MIKHLIN, P.I.

Case of aneurysmal vascular dilatation in the lungs. Vest. rent.
1 rad. 40 no.1361-62 Jan-F '65. (MERA 18:6)

1. Moskovskiy oblastnoy protivotuberkuleznyy dispanser (glavnyy
vrach V.S. Kokonina).

MIKHLIN, P.L.

The problem of Candidamycosis in pulmonary tuberculosis [with summary in French]. Probl.tub. 35 no.8:42-45 '57. (MIRA 11:4)

1. Zaveduyushchiy Pushkinskim protivotuberkuleznym dispanserom
(g. Pushkino)

(TUBERCULOSIS, PULMONARY, ther.
antibiotics, post-ther. disseminated moniliasis (Rus))
(MONILIASIS, etiol. & pathogen.)

antibiotics causing disseminated moniliasis in pulm.
tuberc. ther. (Rus))
(LUNG DISEASES, etiology and pathogenesis,
moniliasis caused by antibiotics in pulm. tuberc.
ther. (Rus))

MIKHLIN, P.L.

Diabetes insipidus in the clinical aspects of tuberculosis.
Probl.tub. 36 no.7:109-111 '58. (MIRA 12:8)

1. Iz Moskovskogo oblastnogo protivotuberkuleznogo dispansera
(glavnnyy vrach V.S.Kokonina).
(DIABETES) (TUBERCULOSIS)

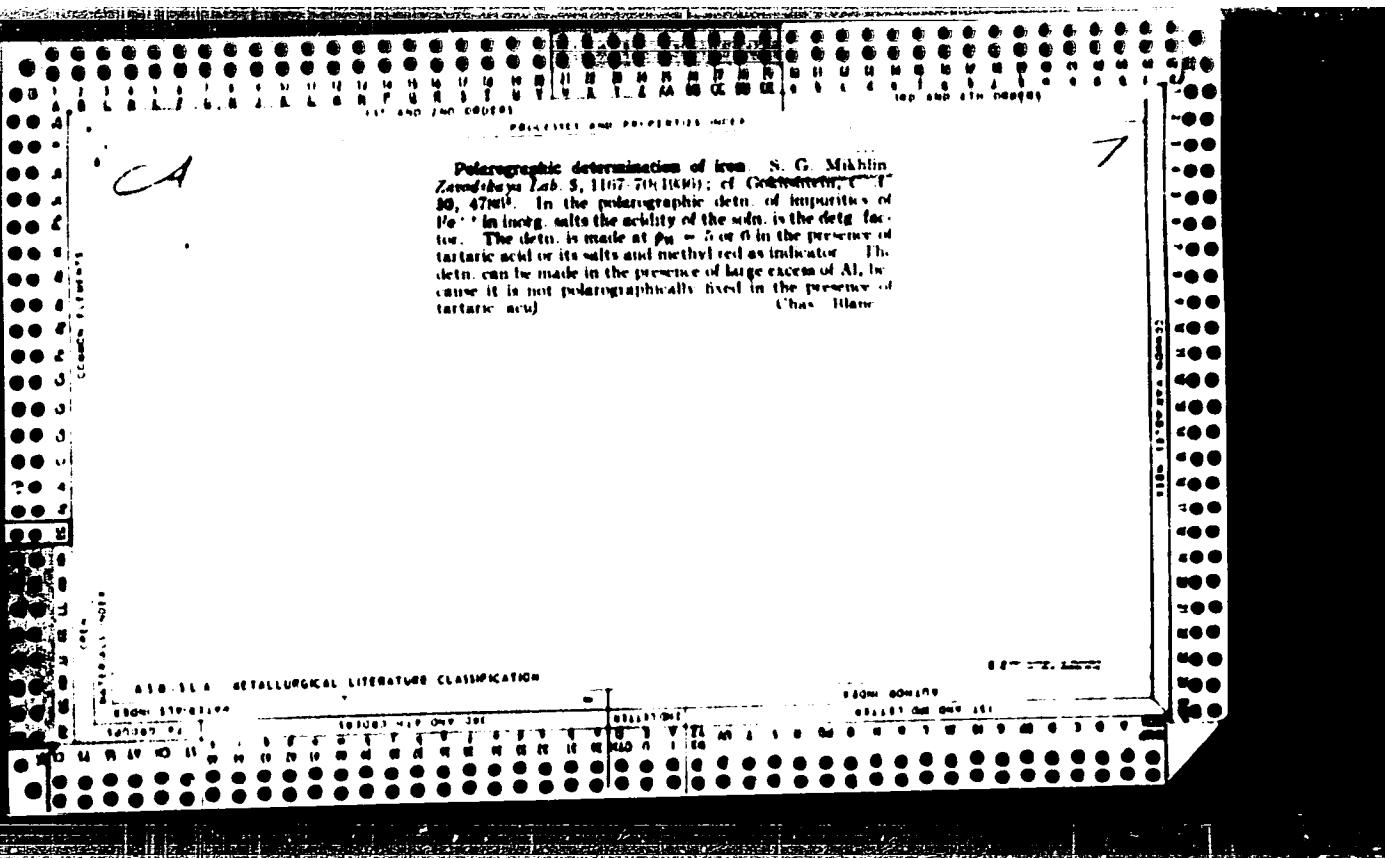
MIKHLIN, P.L. (Moskva)

Progressive interstitial pulmonary fibrosis (Hamman-Rich syndrome).
Sov. Med. 26 no.9:123-126 S '62. (MIRA 17:4)

1. Iz Moskovskogo oblastnogo protivotochekulieznogo rispanera
(glavnyyy vrach V.S. Kokonina.)

MIKHLIN, S. G.

Mikhlin, S. G., and Sobolev, S. "Mathematical Seismology in the U.S.S.R." Izdatelstvo Matematicheskikh Nauk, Moscow-Leningrad, Vol. 1, 1936, pp. 226-256.



MIKHLIN, S.G.

Osnovnyye krayevyye zadachi dlya volnovoro uravneniya. DAN, 20 (1940), 281-285.
Singulyarnye integral'nyye uravneniya s dvumya nezavisimymi peremennymi. Matem. sb.,
1 (43), (1936), 535-552.
Dopolneniye k stat'yе Singulyarnyye integral'nyye uravneniya s dvumya nezavisimymi
peremennymi. Matem. Sb., 1 (43), (1936), 563-564.
Problema ekvivalentnosti singulyarnykh integral'nykh uravneniy. Matem. sb., 3 (45),
(1937), 121-141.

SO: Mathematics in the USSR, 1917-1947
edited by kurosh, A.G.,
Markushevich, A.I.,
Rashevskiy, P.K.
Moscow-Leningrad, 1948

Influence of the nature and the concentration of electrolytes on the altitude of the wave of the iron ion in polarographic determinations. R. S. Burker and S. G. Mikhlin
Izv. Akad. Nauk SSSR, Khim. Nauki 12, 209-212 (in English) 1947.

Fe^{2+} can be polarographically detd. in the presence of HCl , the most favorable μ being 3.0-5.1. In the presence of LiCl , NaCl , NH_4Cl , KCl , RbCl , CaCl_2 , SrCl_2 and BaCl_2 the altitude of the wave for Fe^{2+} increases with increasing concn. of the electrolyte within M and $0.1 M$, the effect for the alk. metals being the greater, the greater is the radius of the ion of the metal. I. G. Tolmachev

450-11A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED 11/16/1964

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4

KHRISTIANOVICH, S. A.; MIKHLIN, S. G.; DEVISON, V. V.

Nekotorye Novye Voprosy Mekhaniki Sploshnoy Sredy (Some New Problems of the Mechanics of a Continuous Medium), 1938.

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134120014-4"

CA

Polarographic determination of chlorides, bromides, iodides, and cyanides. S. G. Mikhlin. *Trudy Vsesoyuznogo konferentsii po analiticheskoi khimii*, 2, 507-527 (1943). Anodic polarization was studied by connecting the dropping electrode with the pos. and the large electrode with the neg. terminal of the electrolyzer (contg. 0.1 N KNO₃). Cl⁻ was detd. in an electrolyzer with a large Hg cathode and a dropping anode. In the presence of S²⁻ (several drops of selenite, freshly prep'd. Hg) water was added to the electrolyte; the electrolyte gave a curve with a large rectilinear portion on which the waves of CN⁻, Br⁻, I⁻, and other anions were registered. The CN⁻ can be detd. by anodic polarization in the presence of a 1000-fold excess of Cl⁻, 500-fold excess of Br⁻, and 30-40-fold excess of I⁻. SO₄²⁻, PO₄³⁻, and CO₃²⁻ do not interfere. The soln. should be either weakly acid or neutral. I⁻, Br⁻, and Cl⁻ can be detd. by anodic polarization in the same sample.

If their concns. in the soln. are similar to that of CN⁻ in the presence of a considerable excess of Cl⁻ (as compared with iodides and bromides) the soln. should be dilute, to a 0.01 or 0.001 N concn. of the chlorides, and the iodide, by anodic polarization with a galvanometer with a sensitivity of 1/500 and 250. With such sensitivity the ions I⁻ and Br⁻ are not registered on the polarogram, owing to the great diffn. of the soln. In a soln. sample I⁻ and Br⁻ are oxidized to IO₃⁻ and BrO₃⁻ and the ions are detd. by cathodic polarization. Br⁻ was oxidized to BrO₃⁻ with KClO₃ obtained by passing Cl⁻ through a 12% KOH soln. A little CaCO₃ was added to the soln., which was heated on a water bath for 20 min., cooled, treated with 2 ml. of N KOH, add to 100 ml., and a polarogram taken. The heights of the waves are strictly proportional to the concn. of Br⁻. I⁻ was oxidized to IO₃⁻ with Cl⁻ water. Owing to the considerable difference between the reduction potentials of IO₃⁻ and BrO₃⁻, these ions can be detd. regardless of their relative concns. Cl⁻, ClO₃⁻, and ClO₄⁻ are not reduced at the cathode even in concns. of 1/100/1000; they do not, therefore, interfere with the detn. Three references.

W. R. Henn

ASIN-11A METALLURGICAL LITERATURE CLASSIFICATION

13040 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

14000 1110021974

Mikhlin, S. G. Les théorèmes de Fredholm dans la théorie des équations intégrales singulières. C. R. (Doklady) Acad. Sci. URSS (N.S.) 54, 759-760 (1946).
In previous papers [Doklady Akad. Nauk SSSR (N.S.) 11 (1936 II), 3-6 (1936); same C. R. (N.S.) 19, 353-355 (1938); Rec. Math. [Mat. Sbornik] N.S. 1(43), 535-552 (1936)] the author introduced the concept of the "symbol" of a singular integral equation. Subsequently he proved that a singular integral equation is equivalent to a Fredholm equation if and only if its symbol vanishes nowhere; operators having such a symbol are termed singular regular. It is proved that the three Fredholm theorems hold for singular regular equations; similar results hold for systems.

W. J. Trjitzinsky (Urbana, Ill.).

Source: Mathematical Reviews, 1948, Vol 9, No. 3

Some good

MIRKIN, S. G.

Michlin, S. G. Fundamental solutions of the dynamic equations of the theory of elasticity for non-homogeneous media. Akad. Nauk SSSR. Prikl. Mat. Meh. 11, 423-432 (1947). (Russian. English summary).

The object of this paper is to generalize the construction of singular displacement vectors, introduced by Volterra, to nonhomogeneous elastic media, and to obtain the generalized formula of Stokes giving the fundamental solution of the theory of elasticity for nonhomogeneous media. It is demonstrated that if the initial displacements and velocities of points in an infinite elastic medium are given, the generalized Stokes formula leads to a certain integro-differential equation for the displacements. *f. S. Svetolnikoff.*

Svetolnikoff

Source: Mathematical Reviews, 1948, Vol 9, No. 5

MIKHLIN, S. G.

Mikhlin, S. G. On the solution of linear equations in Hilbert
space. Doklady Akad. Nauk SSSR (N.S.) 57, 11-12
(1947). (Russian)

Let H be a Hilbert space and let A be a closed linear operator defined on a dense subspace D_A of H . Let A^* be the adjoint of A . Then $\langle A\phi, \psi \rangle = 0$ for all ϕ in D_A if and only if $A^*\psi = 0$. Thus the range H' of A is dense in the orthogonal complement H_1^* of the null space H_1 of A^* . In this note the author shows that a sufficient condition that $H' = H_1^*$ is that there exist a bounded linear operator M such that MA coincides on D_A with $I+T$, where I is the identity operator and T is completely continuous. The proof [which may be given in full in a few lines] consists in restricting A to the orthogonal complement of its null space and showing that the inverse of the result cannot be unbounded because of the complete continuity of T and the closedness of A . The author gives an example showing that the theorem need not be true if M is merely closed. [If A is any bounded operator with zero in its continuous spectrum the inverse of A will serve as an M for which T is zero.] He concludes with the remark that the theorem has as consequences certain theorems about the solution of singular integral equations. G. W. Mackey.

Source: Mathematical Reviews, 1948, Vol. 9, No. 5

MIKHLIN, S. G.

16
Mihlin, S. G. Singular integral equations. Uspehi Matem. Nauk (N.S.) 3, no. 3(25), 29-112 (1948). (Russian)

The subject of singular integral equations (in the sense of principal values) had its beginnings in some of the work of Paley and of Hilbert, was later continued by F. Noether [Math. Ann. 82, 42-63 (1920)], Carleman [Ark. Mat. Aste. Fys. 16, no. 26 (1922)] and subsequently by Musielakowski, Mihlin, Giraud [Ann. Sci. Ecole Norm. Sup. (3) 51, 251-372 (1934); 56, 119-172 (1939); these Rev. L. 145; and some other papers], Tricomi [for example, Math. Z. 27, 87-133 (1927)], to mention just a few. In pages 32-79 the author gives a systematic exposition of the essential features of the theory of singular integral equations in the complex plane, with integrations in the sense of Cauchy along sufficiently smooth curves, open or closed and having no intersections. Much of this work has to do with the reduction to regular Fredholm equations of the second kind. One approach consists in the elaboration of Carleman's idea of relating singular integral equations to boundary value problems of Hilbert-Poincaré type (these

combined with certain other ideas). Another approach [Mihlin] consists in finding operators whose application to the given equations renders them regular. Developments relating to singular integral equations involving multidimensional integrals are given in pp. 79-111. Here the notable work is due to Mihlin, Giraud (some of their contributions are mutually supplementary) and to Tricomi. The method is that of constructing suitable operators, whose application to the given singular integral equations regularizes them. The theory in the two-dimensional Euclidean plane has been developed by Mihlin (this involves use of Fourier series to represent the kernels). The extension to higher dimensional spaces involves expansions into spherical harmonics and has been made possible by an extension by Giraud [C. R. Acad. Sci. Paris 202, 2114-2127 (1936)] of Mihlin's work on composition of singular integrals. It is shown how to treat singular integral equations with integrals extended over an m -dimensional manifold Ω , without edges and imbedded in a Euclidean space of $\ell^2(S^m)$ dimensions. Some extensions to Hilbert space are even mentioned. H. J. Peitinger (Ulm, Germany)

Source: Mathematical Reviews,

Vol. 11, No. 1, 1950, p. 10.

20

MIKHLIN, S. G.

MIKHLIN, S. G.

Mikhlin, S. G. Singular Integral equations with continuous coefficients. Doklady Akad. Nauk SSSR (N.S.) 59, 435-438 (1948). (Russian)
The author studies the equation

$$(1) \quad a(s)\varphi(s) + b(s)s^{-1} \int \varphi(t)(t-s)^{-1}dt + T\varphi = f(s);$$

here the integral is in the sense of principal values; L is a "smooth" closed contour of bounded curvature in the complex t -plane; s is on L ; T is a completely continuous operator in the function-space in which the unknown $\varphi(s)$ is to be found. The author proves for (1) theorems of F. Noether [Math. Ann. 82, 42-63 (1921)] under the assumptions: (i) $\varphi \in L_2$ (along L), (ii) $a(s)$, $b(s)$ are continuous, (iii) $a^*(s) + b^*(s) \neq 0$ (on L). It is indicated that similar results can be established for systems.

W. J. Trjitzinsky (Urbana, Ill.).

Source: Mathematical Reviews,

Vol 9 No 7

MIKHLIN, S.G.

Mikhlin, S. G. On the integral equation of F. Tricomi.
 Doklady Akad. Nauk SSSR (N.S.) 59, 1053-1056 (1948).
 (Russian)

In his study of equations of mixed elliptic-hyperbolic type
 F. Tricomi [Atti Accad. Lincei, Mem. Cl. Sci. Fis. Mat.
 Nat., (5) 14, 133-247 (1923)] was led to the consideration
 of the equation

$$(1) \quad v(x) - \lambda \int_0^x (x-y)^{-1} [(y-x)^{-1} - (x+y-2xy)^{-1}] v(y) dy = f(x).$$

The existing theory of singular (in the sense of principal values) integral equations is not applicable since the "non-singular" component $(x+y-2xy)^{-1}$ is not integrable over $(0 \leq x \leq 1, 0 \leq y \leq 1)$. Tricomi gave a long and complicated solution. The author lets $x^b v(x) = \varphi(x)$, $x^b f(x) = g(x)$, so that (1) becomes

$$(2) \quad \varphi(x) - \lambda \int_0^x (x-y)^{-1} (x+y-2xy)^{-1} \varphi(y) dy = g(x);$$

$\varphi(x)$ is assumed of a Hölder class; solutions φ are sought in the class of functions such that: (a) φ is of a Hölder class on every interval $0 < a \leq x \leq b < 1$; (b) $\varphi(x) \log x$ and $\varphi(x) \log(1-x)$ are summable on $(0, 1)$. The author applies to (2) successfully and concisely the method of T. Carleman [Ark. Mat. Astr. Fys. 16, no. 26 (1922)].

W. J. Trifuninsky (Urbana, Ill.).

Trifuninsky
2/2

Source: Mathematical Reviews,

Vol. 9 No. 8

MIKHLINE, S. G.

Mikhlin, S. G. On the convergence of Galerkin's method.
Doklady Akad. Nauk SSSR (U.S.S.R.) Oct. 1957 (1958).

(Russian)
Source: Let H be a separable Hilbert space and A a linear operator defined on a linear manifold dense therein. Let it be required to solve the equation (I) $Au - f = 0$, where f is a given element of H . Let $\{\phi_n\}$ be a complete basis in H . Then Galerkin's method, as explained by the author, consists in finding a sequence of approximate solutions $\{u_n\}$, where u_n is a linear combination of ϕ_0, \dots, ϕ_n such that $Au_n - f$ is orthogonal to $\phi_{n+1}, \dots, \phi_m$. The principal theorem announced is that if $Au - f = A_Ku$, where A_K is positive definite and self-adjoint, and if λ is a numerical parameter, then the sequence $\{u_n\}$ converges in the following two cases: (I) the operator A has an inverse which is defined everywhere in H ; (II) the operator $T = A_K^{-1}K$ is completely continuous in a certain subspace H . (Certain auxiliary conditions are omitted here.) Further, in case II the Galerkin method leads to a convergent process in connection with the characteristic value problem. A number of applications are given in which the author states that he has shown the hypotheses are fulfilled. There are neither proofs nor references, except a single citation in the case of one application.
H. B. Carr (State College, Pa.)

Snow

Vol. 10 No. 2

MIKHLIN, S. S.

Equations and simultaneous equations containing the principal
value of the integral. Uch. zap. LGU no. 96:135-162 '48.
(Integral equations) (MLRA 10:2)

MIKHLIN, S.G.

Integral Equations

Mikhlin, S.G. Integral'nye uravneniya i ikh prilozheniya k nekotoryim problemam mehaniki, matematicheskoi fiziki i tekhniki. [Integral Equations and their Applications to some Problems of Mechanics, Mathematical Physics and Engineering]. 2d ed. Gosudarstv. Izdat. Tehn.-Tekh. Lit., Moscow-Leningrad, 1949. 380 pp.

[The first edition appeared in 1947.] This book consists of part I, containing a general exposition of regular Fredholm equations, equations with a weak singularity, and singular equations (integrations in the sense of principal values), and of part II, relating to applications of the equations mentioned to Dirichlet-type problems and some problems of hydrodynamics and elasticity, the biharmonic equation $\Delta^2 W = 0$, the equation $\Delta U + k^2 U = 0$, and boundary value problems of Hilbert-Riemann type. The integral equations are of the second kind and of one of the following three types: (1) regular Fredholm; (2) containing a weak singularity (that is, essentially reducible to (1) by a finite number of iterations); (3) singular equations (as indicated above). For (1) the author gives the method of successive approximations, degenerate kernels, Fourier series in the general case, and the classic Fredholm theorems. Regular symmetric kernels are considered and the Hilbert-Schmidt theory is expounded: various effective methods are given for the determination of the characteristic values. Further, for type (3) most of the developments are in the complex plane; the kernels are of Cauchy or Hilbert type (of importance in the theory of analytic functions); composition of singular integrals is developed; the case of open (sufficiently smooth) contours is treated and use is made of Riemann boundary-value problems and of the Picard formulara. In part II, in addition to the material mentioned, the author presents Dirichlet-type problems in connection with multiply connected regions and their conformal mapping, representation of biharmonic functions, the boundary value problems for the biharmonic equation, and aerial flow around an airplane-wing. Also considered are some integrals analogous to potentials ($\Delta U + k^2 U = 0$) and heat potentials.

The symmetric integral equations are applied to problems like that of the vibrating string or rod. Equations of type (3) are applied in connection with a variety of boundary value problems of Hilbert-Riemann type as well as to the mixed problem of elasticity. R.P. J. Tricomi.

Source: Mathematical Reviews.

Vol. 12 No. 9

MIKHLINE, S. G.

Mikhline, S. G. - "The method of least squares in problems of mathematical physics," Uchen. zapiski (Leningr. gos. un-t im. Zhdanova), Seriya matem. nauk, Issue 17, 1949, p. 167-206, - Bibliog: 12 items.

SG: U-3736, 21 May 53, (Letopis 'Zhurnal 'Nauk Statei', No. 17, 1949).

MIKHLIN, S.G.

The method of least squares in problems of mathematical physics.
Uch. zap. IGU no.111 157-206 '49. (MIRA 10:5)
(Least squares) (Mathematical physics)

MIKHLIN, S. G.

1/3

*Mikhlin, S. G. *Pryamye metody matematicheskoi fiziki*.
[Direct methods in mathematical physics]. Gosudarstv. Izdat. Tehn.-Teor. Lit., Moscow-Leningrad, 1950.
428 pp.

The author understands, by the phrase "direct methods", methods for the approximate solution of problems of differential and integral equations which involve the replacement of the original problem by the solution of systems of algebraic equations. The present book, addressed to mathematical engineers, is devoted to a development of the following four main methods of this general description: the method of Ritz, the method of Galerkin, the method of least squares, and the method of finite differences. The principal aim is to ascertain the kind of approximation to the exact

solution which is furnished by each of these procedures. The first three methods furnish, generally speaking, approximations which converge "in the mean" to the exact solution. Chapter I is devoted to an introduction to Hilbert space and Lebesgue integration. Chapters II, III, and IV deal with the Ritz method and variational methods [see, in this connection, the preceding review for a more extended

MIHLIN, S. G.

2/3

[description of these questions]. Chapter V is devoted to the method of Galerkin and chapter VI to the method of least squares, which are also described in detail in the review just mentioned. The level of exposition is very high, and the readability of these chapters is facilitated by the concise summaries placed at the end of chapters III, V and VI. Chapter VII treats the method of finite differences, with particular reference to the "method of lines" [see L. V. Kantorovich and V. I. Krylov, Approximate methods in higher analysis, 2nd ed., Gosstekhizdat, Leningrad-Moscow, 1941] which, in essence, consists in the approximate integration of problems in partial differential equations by replacing them by the integration of systems of ordinary differential equations. Throughout the book there are numerous concrete examples of numerical applications of these

Ora, 1951, pp. 279-289; these Rev. 13, 235]; while in connection with the determination of eigenvalues, mention should be made of the method of A. Weinstein [Mémor. Sci. Math., no. 88, Gauthier-Villars, Paris, 1937] (which complements the Rayleigh-Ritz method); see also N. Aronszajn [Proc. Nat. Acad. Sci. U. S. 37, 37-40 (1951); these Rev. 10, 381] and H. Weyl [Bull. Amer. Math. Soc. 56, 115-139 (1950); these Rev. 11, 666].
J. B. Diaz (College Park, Md.).

USER/Mathematics - Applied Mathematics Nov/Dec 50
Mathematical Physics

"Variational Methods for Solving the Problems of Mathematical Physics," S. G. Mikhlin
"Uspishi Matematicheskikh Nauk" Vol V, No 6(40), pp 3-52

Theorem of minimum functional; General solutions of minimal problems; Ritz' method; Method of orthogonal projections; variational method in problems of eigen values; Dirichlet's problem; free term in differential equation; first boundary-value

170256
USER/Mathematics - Applied Mathematics Nov/Dec 50
(Contd)

Problem in theory of elasticity; S. L. Sobolev's theorems on "closure of spaces"; Neumann's problem; determination of error in approximate solution; Galerkin's method; etc.

170256

USSR/Mathematics - Bibliography

Sep/Oct 51

"Criticism and Bibliography," S. G. Mikhlin, F. D. Gal'lov, M. A. Naymark

"Uspekhi Matemat Nauk" Vol VI, No 5 (45), pp 206-210

Following 3 books reviewed: (1) V. D. Kupradze, "Boundary-Value Problems of the Theory of Oscillations and Integral Equations," 1950, 4,000 copies, 12.60 rubles; (2) N. P. Vekua, "Systems of Singular Integral Equations and Certain Boundary-Value Problems," Gostekhizdat, 1950, 252 pp, 9.50 rubles; (3) F. R. Gantmakher and M. G. Kreyn, "Oscillation Matrices and Kernels and Small Oscillations

191T100

USSR/Mathematics - Bibliography (Contd.) Sep/Oct 51

of Mechanical Systems," 2d Ed, Gostekhizdat, 1950, 359 pp, 16.50 rubles.

191T100

Mikhlin, S. G.

UNIV/MATHEMATICS - APPROXIMATIONS, Nov/Dec 51
Inequalities

"Concerning One Inequality for the Boundary
Values of Harmonic Functions," S. G. Mikhlin
"Uspenskii Matematicheskii Sbornik" Vol VI, No 6 (46),
pp 158, 159

Generalizes M. I. Vishik's inequality

$$\sqrt{\int_S (du/dv)^2 dS} \leq \sqrt{\int_S (\text{grad } u)^2 dS}$$

where u is a function harmonic on a sphere
19678

UNIV/MATHEMATICS - APPROXIMATIONS, Nov/Dec 51
Inequalities (Contd)

bounded by a sphere S , v is the normal to the
sphere, and $\text{grad } u$ designates the component
of $\text{grad } u$ on the plane tangent to S . (cf. Ibid.
Vol VI, No 2 (42), 1951.)

19678

Mikhlin, S. G.

MIKHlin, S. G.

Mikhlin, S. G. On equations of elliptic type. Doklady Akad. Nauk SSSR (N.S.) 77, 377-380 (1951). (Russian)

Let Φ be a selfadjoint elliptic differential operator of second order in n variables. The author derives a Green formula for the equation $-\Phi u + bu = f$, where b and f are given scalars. This formula can be considered as an integral equation for u and it is shown that it is equivalent to the differential equation. Properties such as infinite differentiability and square-integrability are derived. W. Feller.

Source: Mathematical Reviews,

Vol. 12 No. 4

80m
next